

## Peak-to-average power ratio reduction in OFDM systems using smoothing technique

### ABSTRACT

This paper presents a new peak-to-average power ratio (PAPR) reduction technique by smoothing the power components of OFDM signals. The smoothing technique only adds a simple process to the existing OFDM signal processing. Also, there is no need to send side information to the receiver for signal recovery. Smoothed OFDM system with 64 subcarrier and 16-QAM modulation achieved reduction in PAPR in the range of 0.5 to 2.5 dB, with out-of-band shoulder lying less than -15 dB compared to in-band level.

**Keyword:** Complementary cumulative distribution function (CCDF); OFDM; PAPR reduction; Peak-to-average power ratio (PAPR); Smoothing technique